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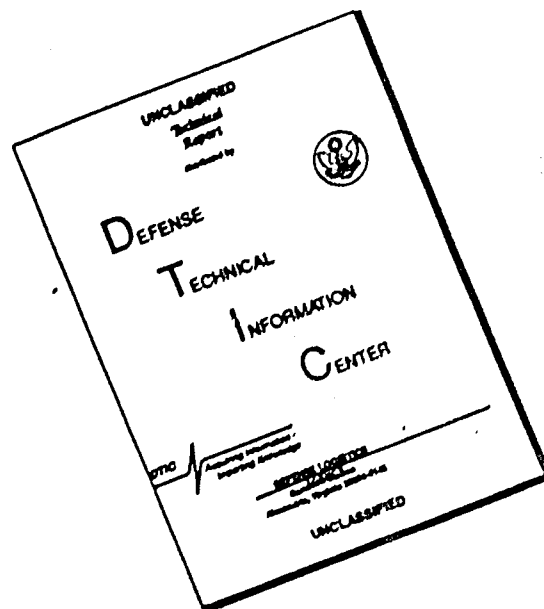
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DEPARTMENT OF THE ARMY
OFFICE OF THE ADJUTANT GENERAL
WASHINGTON, D.C. 20310

IN REPLY REFER TO

AGDA (M) (19 Feb 70) FOR OT UT 694314

24 February 1970

SUBJECT: Operational Report - Lessons Learned, Headquarters, 20th Engineer Battalion, Period Ending 31 October 1969

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BY ORDER OF THE SECRETARY OF THE ARMY:

Kenneth G. Wickham

KENNETH G. WICKHAM
Major General, USA
The Adjutant General

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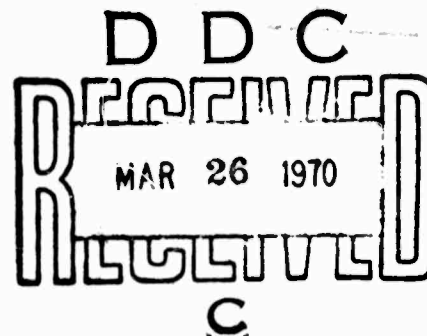
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DEPARTMENT OF THE ARMY
Headquarters, 20th Engineer Battalion (Combat)
APO San Francisco 96318

EGCB-OP

31 October 1969

SUBJECT: Operational Report-Lessons Learned 20th Engineer Battalion (Combat),
Period Ending 31 October 1969, RCS CSFOR-65 (R2)

Commanding Officer
937th Engineer Group (Combat)
APO 96318

Commanding General
18th Engineer Brigade
APO 96377

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1. Operations: Significant Activities

a. At the beginning of the report period the Battalion HQ, HQ Co, Company B (-), Company C, Company D (-) were located at Engineer Hill. The 538th Engineer Company (LC) was located at RC-3, 4 miles north of Dong Xuan, while the 584th Engineer Company (LE) was situated at Woolly Bully Too, south of Kontum City. Company A had its first and third platoons located at Woolly Bully Compound, while their second platoon was at Ben Het.

(1) The first and third platoons of Co A, located at Woolly Bully, were performing minesweep and maintenance operations of QL-14N and working on up-grading compound facilities on the Woolly Bully Compound. Simultaneously the 2nd platoon was engaged in rebuilding roads and preparing drainage for Ben Het Firebase.

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(2) Company B had its first and third platoons located at Engineer Hill engaged in the PX Warehouse project at Camp Enari and operation of a prefab yard supporting other Battalion projects and repair of DBST with elements of the first platoon of the 584th Engr Co (LE).

(3) Company C was rearranging a new company area at Engineer Hill as they were just moving off of a pipeline burial project at An Khe.

(4) Company D's first platoon was performing minesweep and maintenance operations on QL-14N between Pleiku and Kontum in addition to constructing a TOC for the 45th GS Group at Camp Schmidt. The second platoon was located at Cheo Reo on an airfield repair project while the third platoon was repairing a high tower at Artillery Hill.

(5) The 538th Engr Co (LC) was finishing up a land clearing project along LTL-6B from Qui Nhon to Dong Xuan for the ROK Tiger Division within their AO.

(6) The 584th Engr Co (LE) was operating the quarry at Wooly Bully and were involved with perimeter and cantonment upgrade of the compound at Wooly Bully Too.

b. On 2 August the 538th Engr Co (LC) completed a 48 day land clearing mission along LTL-6B that yielded 4946 acres of cleared area and began retrograde operations to stand-down in Phu Tai.

c. Third platoon of Company C began planning and preparation for LOC maintenance mission on QL-19E from Pleiku to the Mang Yang Pass while the 2nd platoon began roadway construction and POL berms at Camp Holloway.

d. On 5 August 2nd platoon, Company B, completed six SEA-Huts for Co A on Engineer Hill while 1st platoon completed the prefab concrete forms and finished tying rebar for the Pasco Building at Camp Enari.

e. On 9 August 3rd platoon, Co D completed the project on a high tower at Artillery Hill with a total of 560 manhours and 60 equipment hours expended. The 538th Engr Co (LC) was at stand-down in Phu Tai and began complete TI on all equipment. Second platoon, Company B relocated from Wooly Bully to LZ Panther to build guard towers and upgrade the access road.

f. On 14 August first platoon, Co B, relocated to Dak To to construct berms for 10,000 gallon POL bladders.

g. On 17 August third platoon, Company B replaced the second platoon at Wooly Bully to continue work on the maintenance shed. Second platoon returned to Engineer Hill to prefab materials for the maintenance shed.

h. On 19 August the second platoon, Co D completed the repair of the airfield at Cheo Reo and returned to Engineer Hill. The project expended a total of 17,883 manhours and 3436 equipment hours.

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i. On 20 August 2nd platoon, Co C began upgrade of QL-14B after relocating from Engineer Hill to LZ Meredith.

j. On 22 August the first platoon, Company D completed construction of the 45th GS Gp TOC. Although a self-help project initially, it was necessary for the engineers to do the majority of the work in order to meet the completion date. The TOC consisted of two 16' x 28' semi-underground cells built on concrete pads and connected by a 72" diameter section of culvert. The entire installation is completely waterproof. A total of 4529 manhours and 670 equipment hours were expended.

k. On 22 August second platoon, Co B began construction of a MACV press bunker and engaged in upgrading the Engineer Hill perimeter.

l. On 23 August all project tasks assigned to Company D at Artillery Hill were turned over to Company C due to Company D's move to Kontum. At that point the projects were approximately 75% completed. At the time the airstrip was turned over to Company C it had been completely stripped and reshaped with a grader and two treatments of peneprene had been applied. Drainage work, including installation of a culvert on the northeast end of the strip, was completed. The final 200 yards of the northeast end, however, were ruined due to heavy vehicular traffic on the freshly applied peneprene during "hook" missions which were continued on the airstrip throughout the project.

m. At Yellowbird in Pleiku the bunker repair work was also turned over to Co C. The repair project was at 87% of completion with all the fill on the top and front and parts of the sides removed. Leaks in the roof were patched and the top was sealed with heated LP-3. A roof of 4" x 12" timbers was constructed and covered with corrugated sheet metal. A 48" half-culvert was installed along the bottom and extended past the front and filled with rock to facilitate a french drain system around the bunker. A new entrance was also constructed at the front of the bunker.

n. On 23 August the first platoon, Company A joined the third platoon at Ben Het and began a construction mission on the 155 gun pads and completion of the drive-thru ammo and powder storage bunkers.

o. Company D was relieved of minesweep and maintenance responsibility on QL-14N on 23 August.

p. On 23 August the 538th Engr Co (LC) began extracting from stand-down and moving to RC-1 on QL-19E, one mile from the base of Mang Yang Pass. Two days were used to move into the RC and set up and prepare defensive positions. The perimeter was established with a berm, bunkers and warning devices. Throughout the month of August production was high, averaging approximately 110 acres per day.

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q. On 24 August Company D moved to an old and unused compound adjacent to Woolly Bully Too in Kontum and began upgrading and improvements which resulted in a highly desirable company area.

r. On 25 August Company D had their prefab yard set-up in Kontum and began work on prefabrication of living/fighting bunkers and mortar positions to be constructed at Ben Het.

s. On 26 August the second platoon, Co B moved the prefab yard from Camp Enari to Engineer Hill and began cutting material for bunkers to be erected on the Engineer Hill perimeter.

t. On 27 August the third platoon, Co B completed construction of the maintenance shed at Woolly Bully and second platoon began prefabricating living/fighting bunkers to be constructed at Tan Khanh.

u. On 27 August the first platoon, Co C completed the airfield repair at Duc Co and returned to Engineer Hill. Also the first platoon was called upon to repair a demolished culvert on QL-19E.

v. On 28 August the third platoon, Co B moved to Tan Khanh to begin construction of fifteen 20' x 40' living/fighting bunkers for the 1/92nd Artillery.

w. On 30 August the third platoon, Co C took over the repair of the Yellowbird TOC.

x. On 1 September the first platoon, 584th Engr Co (LE) departed Woolly Bully Too for Ben Het to provide earthmoving support for Company A.

y. On 3 September first platoon, Company A returned to Ben Het to construct 5 mortar pits. This move brought the entire company to the Ben Het project where, with the attached units, site layout and work was initiated to construct 58 living/fighting bunkers.

z. On 4 September the second platoon, Company D was assigned the minesweep mission on 4.2 miles of QL-14N north of Kontum and were given the maintenance mission on QL-14N from Pleiku to Dak To.

aa. On 5 September first platoon, Co D was attached to Co A on the Ben Het project. First platoon completed construction of 26 living/fighting bunkers by 17 October, three weeks ahead of schedule.

bb. On 5 September the soil stabilization plant was completed and tested for operational efficiency by the third platoon, Company C.

cc. Through the first week of September the 538th Engineer Co (LC) experienced a heavy rainfall in their mission area which reduced their average acreage cleared considerably. By the end of the month they were down to a 77 acre average. The dozers were having trouble negotiating the steep slippery slopes

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and were constantly being mired down in crossing the muddy and soft areas. The average daily deadline rate went to 3.9 dozers as a result of overheating, worn sprockets and rollers, and non-functioning track adjustment cylinders. These common deficiencies on the dozers were due to constant operation in deep mud. Although there were no encounters with the enemy, a live B-40 rocket was discovered on the job site and one dozer detonated a WP grenade with its blade.

dd. On 15 September the first platoon, 584th Engineer Company (LE) was attached to Company A at Ben Het to construct the 5 priority roads, the helipad and the airstrip apron.

ee. On 22 September the 584th Engr Co (LE) shut-down the quarry operations at Woolly Bully to prepare to move the company to Weigt-Davis.

ff. On 24 September the 3rd platoon, Company C moved to Weigt-Davis to set up quarters and improve the compound and build living/fighting bunkers.

gg. On 25 September the second platoon, 584th Engr Co (LE) was attached to Company C and moved to Weigt-Davis.

hh. On 30 September the CP and 2nd platoon, Co C convoyed to Weigt-Davis. This closed all of Company C at the Weigt-Davis compound where work was underway to construct living facilities, showers, latrines and upgrading of the compound perimeter.

ii. On 1 October the 584th Engr Co (LE)(-) returned to Engineer Hill to support the Battalion S-3 in making rock and equipment hauls to the projects at Ben Het and Tan Khanh.

jj. On 4 October first platoon, Company B finished the third bunker at Tan Khanh and third platoon began repair work at Yellowbird on the TOC. First platoon also moved a 250 barrel tank from Dak To to the firebase at Old Dak To and the first squad relocated to Old Dak To to begin erection of the MACV water tower.

kk. On 7 October the 538th Engineer Company (LC) relocated to a new road camp due to excessive mud and soft areas on the sites remaining to be cleared at their previous location. Production increased considerably subsequent to the move due to less rain, dryer ground and less dense vegetation. Average daily acreage increased to 100.5 and the deadline rate to 2.5 dozers per day. A few enemy incidents occurred after moving to the new road camp. On 9 October a dozer touched off a 15 pound basket mine with minor damage to the dozer blade and no casualties.

ll. On 9 October one squad from the 1st platoon, Company C moved to Cheo Boo to begin construction site preparation of a POW compound.

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mm. On 12 October the 3rd platoon, Company D completed the prefabrication of 58 living/fighting bunkers and 5 mortar pits for Ben Het. The third platoon was responsible for unloading, cutting, pre-packing and loading the materials to be convoyed to Ben Het for erection by the constructing unit.

nn. On 13 October the remainder of the 584th Engineer Company (LE) moved to Weigt-Davis, set up the company CP and began supporting the operations of the quarry. The 2nd platoon at this time was returned to control of 584th Company HQ from Company C.

oo. On 14 October the remainder of the first platoon, Company C was moved to Cheo Reo for construction of the POW compound.

pp. On 15 October the second and third platoons, Company D began work on the Kontum Firebase. The scope of the project included site preparation and roads, construction of four 175mm/8" gun pads with revetments and berms, eight ready storage ammo bunkers and two powder bunkers.

qq. On 16 October first platoon, Company B repaired damages on Dak To airfield resulting from incoming enemy rounds while continuing construction on the fourth and fifth bunkers and the water tower at Old Dak To.

rr. On 17 October the first platoon, Co D completed the 26 living/fighting bunkers at Ben Het three weeks ahead of schedule and began assigned task of removing the SSP from the Ben Het airstrip.

ss. On 18 October the third platoon completed work on the TOC for 45th GS Gp at Camp Schmidt.

tt. On 20 October the fourth bunker at Tan Khanh was completed by first platoon, Company B and the water tower at Old Dak To was completely erected.

uu. On 21 October support platoon, 584th Engr Co (LE) began rock haul from the quarry at Weigt-Davis.

vv. On 22 October the 584th Engr Co (LE) began rock production with the crusher operations at Weigt-Davis.

ww. On 25 October the second platoon, Company B turned the minesweep operations over to the ARVN's.

xx. On 26 October the first platoon, Company D completed work on the Ben Het airstrip and began assisting third platoon, Company A with the construction of the 155 gun pads.

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yy. On 27 October the first platoon, Company B began construction of the sixth bunker at Tan Khanh. The second platoon was assigned a recon of bridge 19-33 which was demolished the night of the 25th of October. The third platoon completed repair work on the TOC at Yellowbird.

zz. On 28 October an EM platoon of the 15th Engineer Company (LE) was attached to Company C and relocated at Camp Enari to begin upgrade construction of QL-14S.

aaa. On 29 October second platoon, Company B began constructing rock cribs for construction of a bypass for bridge 19-28.

bbb. At the close of the reporting period the units of this Battalion were engaged as follows:

(1) Battalion Headquarters and HQ Co were located at Engineer Hill.

(2) Company A (+) was located at Ben Het completing upgrading of the compound, repair of the airstrip and construction of the 155 pads. Scheduled completion date is 15 November.

(3) Company B's project status was:

(a) On 19E (Bridge 19-28) rock cribs were 90% complete. Continuous enemy activity has hampered progress.

(b) Vertical construction at Tan Khanh is approximately 90% complete. Concrete floors are still uncertain.

(c) Old Dak To water tower is complete with exception of installation of in-line chlorinator.

(d) Company B has been relieved of responsibility for PASCO building (Camp Enari PX) and POL tank at Pleiku tank farm.

(e) Prefab yard will continue to work on assigned projects as tasked.

(4) Company C (-) is located at Weigt-Davis. The first platoon is in Cheo Rao constructing the POW compound and the EM platoon of the 15th Engr Co (LE) attached is at Camp Enari working on QL-14S.

(5) Company D (-) is located at Engineer Hill preparing for a rock haul operation on QL-14S. The first platoon is at Ben Het working on the 155mm gun pads. The third platoon is assigned for technical assistance and equipment support for construction of the firebase at Kontum.

(6) The 584th Engr Co (LE) is located at Weigt-Davis to perform quarry operations and equipment support for the upgrade of QL-14S. The first

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platoon is located at Ben Het attached to Co A to assist construction of the road net.

(7) Clearing operations by 538th Engr Co (LC) were terminated on 31 October and the company began a retrograde to Fleiku for a three week stand-down.

2. Lessons Learned: Commander's Observations, Evaluations, and Recommendations.

a. Personnel. None.

b. Intelligence.

(1) Use of Civic Action Teams

(a) OBSERVATION: The area of a new project includes two large Montagnard villages. This area has not been extensively worked by allied personnel in the past.

(b) EVALUATION: The use of a civic action team could implement the construction project in the area by transforming potential dangerous areas into friendly allies.

(c) RECOMMENDATION: That commands make maximum use of civic action teams to gain friendly allies among the local personnel.

c. Operations.

(1) Using Bituminous Material for a Sealer on Seams of Roofs

(a) OBSERVATION: It was found that heating bituminous material such as AP-3 or RC-800 before application produces a much superior seal than a cold application.

(b) EVALUATION: This method produces a hard surface in two hours which reduces the time before work can proceed over the seal. A cold application does not harden and may run off in a hot sun.

(c) RECOMMENDATION: Heat bituminous material before application when using for a sealer on seams of roofs.

(2) Pouring Concrete Around Footers and Columns on Living/Fighting Bunkers.

(a) OBSERVATION: It was found that if one by material was oiled and tacked around columns they could later be removed after the concrete sets up.

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(b) EVALUATION: This method prevents the concrete pad from cracking if the footers and columns should settle at a later time.

(c) RECOMMENDATION: Oil and tack one by material when pouring footers and columns to prevent concrete pad from cracking when removing one by material after concrete sets up.

(3) Placing AP-3 in Asphalt Distributor

(a) OBSERVATION: While attempting to pump AP-3 into the asphalt distributor, it was found that the AP-3 was too viscous to be forced through the hose.

(b) EVALUATION: The AP-3 was first heated in half 55 gal drums and then poured by hand into the distributor.

(c) RECOMMENDATION: AP-3 should be heated and gravity-fed into the asphalt distributor.

(4) Protecting Fresh Cold Mix from Rain

(a) OBSERVATION: While working at Cheo Reo, it was found that sudden, unpredictable showers would ruin the cold mix which was curing.

(b) EVALUATION: Sufficient canvas was acquired to place over the fresh cold mix during the night and during inclement weather.

(c) RECOMMENDATION: When working in a climate such as Cheo Reo's, sufficient canvas should be on hand to protect the cold mix from sudden rain.

(5) Utilizing Spray Bar on Asphalt Distributor

(a) OBSERVATION: Spraying the large airfield at Cheo Reo necessitated spraying large areas with RC-800 in a short period of time. Hand spraying proved too slow because it slowed the production of the large amount of cold mix required.

(b) EVALUATION: The spray bar on the asphalt distributor was utilized. Because of the wide area it covered, cold mix could be produced much faster.

(c) RECOMMENDATION: The OIC of the project should be aware of all aspects of utilizing equipment on hand.

(6) Stockpiling Inventory

(a) OBSERVATION: Much time was being lost in inventorying stockpiled out material due to remeasuring of materials that were very close in length. Additional time was lost by the receiving unit in again remeasuring for sorting and accounting.

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(b) EVALUATION: The prescribed number of like pieces were banded together and the ends of each piece painted with a color code. A list by size, number, length and color code was sent with each shipment to the receiver.

(c) RECOMMENDATION: For ease of accountability in inventorying, loading, and assembling, the ends of the like lots should be color coded, especially when there is just a matter of inches differing between pieces.

(7) Bracing of Bunkers Requiring Backfill

(a) OBSERVATION: The plans for the living-fighting bunkers built at Ben Het called for bracing between the posts on the front and side walls only.

(b) EVALUATION: The bracing, as planned, was inadequate in that the backfilling of the bunkers was to be filled to the top of the bunker and to the window in front. The unequal pressure caused the bunker to tilt forward. Additional bracing was needed, running from the cap at the rear of the bunker to the sill of the intermediate bend at each of the seven inside posts.

(c) RECOMMENDATION: Heavier bracing must be included in any bunker that is to be backfilled, especially if the backfill creates unequal pressure on the bunker.

(8) Coordination Between Two or More Platoons Working on the Same Project

(a) OBSERVATION: Two or more platoons can be coordinated to work on the same project when responsibility is delegated properly.

(b) EVALUATION: Two to three platoons were working simultaneously on the 58 Living/Fighting bunkers at Ben Het. It was discovered that to facilitate coordination of site layout, footer setting, and materials, it was necessary to place NCO's in charge of the three functions as a full time job to assist all the platoons involved in the building.

(c) RECOMMENDATION: When two or more platoons are working on a large project, efficiency can be increased by making one NCO responsible for divisions of labor for both platoons, i.e. materials and layout.

(9) Unloading Lumber from Trailers

(a) OBSERVATION: When bunker materials arrived at Ben Het by convoy, they had to be unloaded as quickly as possible to return on the same day, before the roads closed at nightfall.

(b) EVALUATION: One fork lift and two scoop loaders were available for unloading an average of six trailers on convoy days. One NCO was assigned to each bunker site to supervise unloading. It was soon learned that due to the close working conditions and the short time available for unloading, that it

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was impractical to lift the timbers to remove them from the trailers. Both fork lift and scoop loader were used to push the material from the trailer. With the smaller materials, banded tightly together, no damage was done in the process.

(c) RECOMMENDATION: When time and space are not available for unloading lumber from tractor trailers, both scoop loaders and fork lifts may be used to push the lumber from the trailers. Smaller lumber must be banded tightly.

(10) Construction Design of Blast-Walls

(a) OBSERVATION: When the blast-walls were filled with earth, the side panels at the ends came apart.

(b) EVALUATION: To keep the walls of the blast-walls joined with the end walls, five turns of #10 wire were passed around the 4" x 4" posts and secured. To further strengthen the ends, a 3" x 8" was nailed across the top of the end posts. It was also noted that the wire around the intermediate post sometimes broke when the fill was dropped in with a scoop loader and that the wire bit quite deep into the posts, causing the sides to bulge. A 3" x 8" nailed across these posts also proved to remedy both problems. (See Incl # 1)

(c) RECOMMENDATION: Wire stays should be used on the end posts of the blast-walls, not just on the internal posts, along with 3" x 8" material nailed across the top of the posts for further strength and protection.

(11) Retaining the 1" x 8" Material as a Rain Shield on a 175mm Ready Powder Bunker

(a) OBSERVATION: The concussion from a 175mm gun, firing at a low angle, caused the 1" x 8" siding material to pop off the walls of the ready bunker.

(b) EVALUATION: 2" x 4" material was nailed over the 1" x 8" material. This material was nailed vertically into the columns. (See Incl #2)

(c) RECOMMENDATION: 2" x 4" or larger material should be nailed over the 1" x 8" material into the columns.

(12) Angle Brace Separation on 175mm Impacement Revetment Walls

(a) OBSERVATION: The concussion of heavy guns and the settling of back-filled material caused the angle braces on the pad revetments to part from the upright posts.

(b) EVALUATION: Nails have pulled through the wood or popped out of the top end of the angle brace.

(c) RECOMMENDATION: The braces should be wired or bolted to the top of the upright. (See Incl #3)

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(13) Design Construction of a Rain Screen on 175mm Ready Bunker

(a) OBSERVATION: The concussion of a 175mm gun, especially when firing at a low angle, blows the tin roofing and 2" x 4" frame apart. Also, the pitch of the roof will not allow sandbags to stay in place.

(b) EVALUATION: The 2" x 4" frame was replaced entirely by 4" x 4" material. To keep the tin roof down, sandbags were wired in a net fashion over the roof. (See Incl # 4)

(c) RECOMMENDATION: The rain screen frame should be made of 4" x 4" material to withstand the concussion and the weight of sandbags. Some allotment should be made for anchoring the sandbags.

(14) Building of Headwalls for Crushers Prior to Relocation

(a) OBSERVATION: The lack of having a constructed headwall prior to relocating crushers causes a loss of valuable time that could be used in crushing rock and road building.

(b) EVALUATION: The failure to construct a headwall system prior to crusher relocation results in attempts to set up the crusher and attempt to crush under most adverse conditions. The time and crusher personnel that are utilized on trying to set up the crusher for crushing could be better utilized in constructing of a headwall system for full production. Failure to do so results in undue delay toward maximum production of crushed rock and the small amount of crushed rock gained by inferior loading systems can not possibly off set the time lost on constructing a proper loading system.

(c) RECOMMENDATION: It is recommended that prior to relocating a crushing unit, that a proper headwall facility be constructed to include the cement pads to set the crusher system on. Also the construction of proper drainage facilities would be most advantageous. During the time that the head wall, drainage system and pads for the crusher system is being constructed, maintenance personnel can properly repair and replace worn and damaged parts.

(15) Defensive Barrier

(a) OBSERVATION: Road camps were lacking in a defensive barrier which helped conceal perimeter set-up and helped protect from land level incoming rounds.

(b) EVALUATION: In order to better protect personnel in camp it was thought that some type of barrier could be constructed for this purpose.

(c) RECOMMENDATION: Utilize the dozers to construct an eight to six foot berm of dirt around the entire perimeter in which bunkers can be built when setting up a Road Camp.

(12)

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SUBJECT: Operational Report-Lessons Learned 20th Engineer Battalion (Combat)
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(16) Pushing Down Steep Slopes

(a) OBSERVATION: When pushing down steep slopes where dozers have no means of exiting down the bottom, dozers spend wasted time trying to ascend the hill when it is too steep.

(b) EVALUATION: Some means of retrieving the dozer should be utilized in order to get the dozer back up the hill in a relatively short time.

(c) RECOMMENDATION: Dozers should be winched down the incline by one or two other dozers so that they can be winched up once the dozer reaches the bottom providing there is no means of exit.

(17) Determination of Road Camp

(a) OBSERVATION: Road camps have been inadequate in rainy weather with poor drainage and low elevation.

(b) EVALUATION: Road camp areas should be reconnoitered more thoroughly to determine the most advantageous area.

(c) RECOMMENDATION: Each road camp should be chosen according to defensive position, high ground, good drainage water table and size of camp.

(18) Working in Incline Weather

(a) OBSERVATION: Dozers working in conditions of rain and mud too poor to be productive.

(b) EVALUATION: Dozers lost valuable time in wet, soft terrain getting stuck and unstuck and the costs of operating were greater than yield.

(c) RECOMMENDATION: Terrain and weather conditions should be studied carefully especially during wet rainy periods to determine the profitability of working in a given area.

(19) Overheating Dozers in Muddy Areas

(a) OBSERVATION: Dozers clogged up with mud in the lower parts of their radiators were constantly overheating.

(b) EVALUATION: Dozers often working under wet conditions and deep muddy areas were constantly overheating because of the mud that has restricted radiator fan idler pulley and clogged up lower vanes.

(c) RECOMMENDATION: Air compressor with surp pump should be kept near job site at a stream or water point during the rainy season to blow out dozers whose systems have been clogged up with a high pressure hose.

(13)

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(20) Contact Vehicle in the Field

(a) OBSERVATION: Where dozers had trouble with a defective part on the job in rugged wet terrain, wheeled contact truck was unable to reach it to repair the part.

(b) EVALUATION: Wheeled vehicle could not reach deadlined dozer in the field and deadlined dozer should not be moved to vehicle along the road.

(c) RECOMMENDATION: Set-up contact equipment on tracked M548 vehicle so that vehicle could reach deadlined dozers in area inaccessible for a wheeled vehicle.

(21) Front Idler Pulleys

(a) OBSERVATION: Anchor pins for shock absorber springs are freezing.

(b) EVALUATION: No lubrication points provided

(c) RECOMMENDATION: Should remove springs every 200 - 300 hours, clean them and free them by soaking in solvent after removing pins.

(22) Front Fan (Radiator) Lubrication

(a) OBSERVATION: Book recommends every 250 hours, front fan (Radiator) fails in less time.

(b) EVALUATION: No lubrication points provided

(c) RECOMMENDATION: Front fan should be lubricated every 125 hours.

(23) Idler Pulley Hoses

(a) OBSERVATION: After 500 - 700 hours engine heat deteriorates the hoses causing them to rupture upon lubrication.

(b) Lack of hoses keeps many dozers deadlined

(c) Hoses should be ordered often, 400 - 500 hours for replacement.

(24) Ordering Fan Belts

(a) OBSERVATION: Wrong fan belts have been received by Federal Stock Number whose manufacturer is Gates.

(b) EVALUATION: Belts are too narrow to fit.

(c) RECOMMENDATION: Order fan belts by the caterpillar part number and request no substitution.

(14)

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Period Ending 31 October 1969, RCS CSFOR-65 (R2)

d. Organization: An organizational chart of the 20th Engineer Battalion (Combat) is included as Inclosure # 5.

e. Training: None

f. Logistics: None

g. Communications:

(1) Storage of Dry Cell Batteries

(a) OBSERVATION: Storage of dry cell batteries in hot humid storage areas such as canexes and tool sheds shortens the useful life of tactical service batteries and makes necessary a larger reserve to supply normal needs.

(b) EVALUATION: Batteries should be stored to insure the longest life possible.

(c) RECOMMENDATION: Storage of these batteries in cool, dry buildings with good ventilation prolongs the shelf-life of them.

(2) Deadline-Time for the Field Telephone. TA312/PT

(a) OBSERVATION: The monsoon season increased the deadline-time for the field telephone because many of the spacers and insulators are made of a fiber board that, through age, readily absorbs moisture, causing frequent, unexplained short circuits.

(b) EVALUATION: Proper facilities should be used to reduce the deadline-time for these telephones.

(c) RECOMMENDATION: A "hot-box" was built using a 1,000 watt incandescent bulb which effectively dries the field phones and greatly reduces the deadline time.

h. Material: None

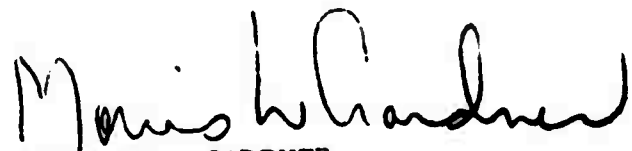
i. Other: None

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ECCB-OP

31 October 1969

SUBJECT: Operational Report-Lessons Learned 20th Engineer Battalion (Combat)
Period Ending 31 October 1969, ACS CSFOR-65 (R2)


MORRIS L. GARDNER
LTC, CE
Commanding

5 Incl
as

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5-CO, 937th Engr Gp (Cbt)
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EGC-CO (31 Oct 69) 1st Ind


SUBJECT: Operational Report on Lessons Learned for the Period 1 October 1969
through 31 October 1969

DA, HEADQUARTERS, 937TH ENGINEER GROUP (COMBAT), APO 96318, 24 November 1969

TO: Commanding General, 18th Engineer Brigade, ATTN: AVBC-CS, APO96377

1. The subject report, submitted by the 20th Engineer Battalion (Combat), has been reviewed and is considered a well compiled report of organization activities.

2. I concur with the observation and recommendations of the Battalion Commander.


W.G. KRATZ
COLONEL, CE
Commanding

AVBC-CG (31 Oct 69) 2nd Ind
SUBJECT: Operational Report of the 20th Engineer Battalion (Combat)
for the Period Ending 31 Oct 69, RCS CSFOR-65 (R2)

DA, HEADQUARTERS, 18TH ENGINEER BRIGADE, APO 96377 15 DEC 1969

TO: Commanding General, U. S. Army Vietnam, ATTN: AVHGC-DET, APO 96375

1. This Headquarters has reviewed the Operational Report - Lessons Learned for the 20th Engineer Battalion (Combat), as indorsed by the 937th Engineer Group (Combat). The report is considered to be an excellent account of the Battalion's activities during the reporting period.

2. This Headquarters concurs with the observations and recommendations of the Battalion and Group Commanders, with the following comments added. Reference: Section 2, Item c(7). Modified plans for living/fighting bunkers have been distributed to the Groups.


J. W. MORRIS
Brigadier General, USA
Commanding

CF:

- 1 - CO, 937th Engr Gp
- 1 - CO, 20th Engr Bn

AVRGC-DST (31 Nov 69) 3d Ind

SUBJECT: Operational Report-Lessons Learned, 20th Engineer Battalion
(Combat), Period Ending 31 October 1969, RCS CSFOR-65 (R2)

HEADQUARTERS, UNITED STATES ARMY, VIETNAM, APO San Francisco 96375 16 JAN 1970

TO: Commander in Chief, United States Army, Pacific, ATTN: GPOP-DT,
APO 96558

1. This headquarters has reviewed the Operational Report-Lessons Learned for the quarterly period ending 31 October 1969 from Headquarters, 20th Engineer Battalion (Combat) and comments of indorsing headquarters.

2. Comments follow:

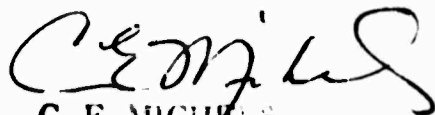
a. Reference item concerning "Use of Civic Action Teams", page 8, paragraph 2b(1); concur. Coordination should be made with the Senior District Advisor and the District Officials to see how the civic action teams can best enhance the image of GVN in the eyes of the people. Maximum participation by the Vietnamese is required. Guidelines on civic action participation and programs are contained in USARV Pamphlet number 515-1.

b. Reference item concerning "Front Idler Pulleys", page 14, paragraph 2c(21); concur. The end item is not identified thus detailed evaluation was not possible. However, lubrication and cleaning as required for efficient operation is a basic operator rule.

c. Reference item concerning "Front Fan (Radiator) Lubrication", page 14, paragraph 2c(22); concur. Lack of end item identification prevents detailed evaluation. However, lubrication orders and maintenance publications recommend reduction of lubrication intervals as required when operating under adverse conditions.

d. Reference item concerning "Ordering Fan Belts", page 14, paragraph 2c(24); nonconcur. If the non-standard item is requisitioned properly with exception data, substitution will not occur unless the item is cross referenced to a federal stock numbered item, in which case the item with a FSN will be supplied. If this item is not satisfactory, a EIR and DD Form 6 should be submitted.

FOR THE COMMANDER:



C. E. MICHELS

MAJ AGC

Assistant Adjutant General

Cy furn:
20th Engr Bn
18th Engr Bde

GPOP-DT (31 Nov 69) 4th Ind
SUBJECT: Operational Report of HQ, 20th Engr Bn (Cbt) for Period Ending
31 October 1969, RCS CSFOR-65 (R2)

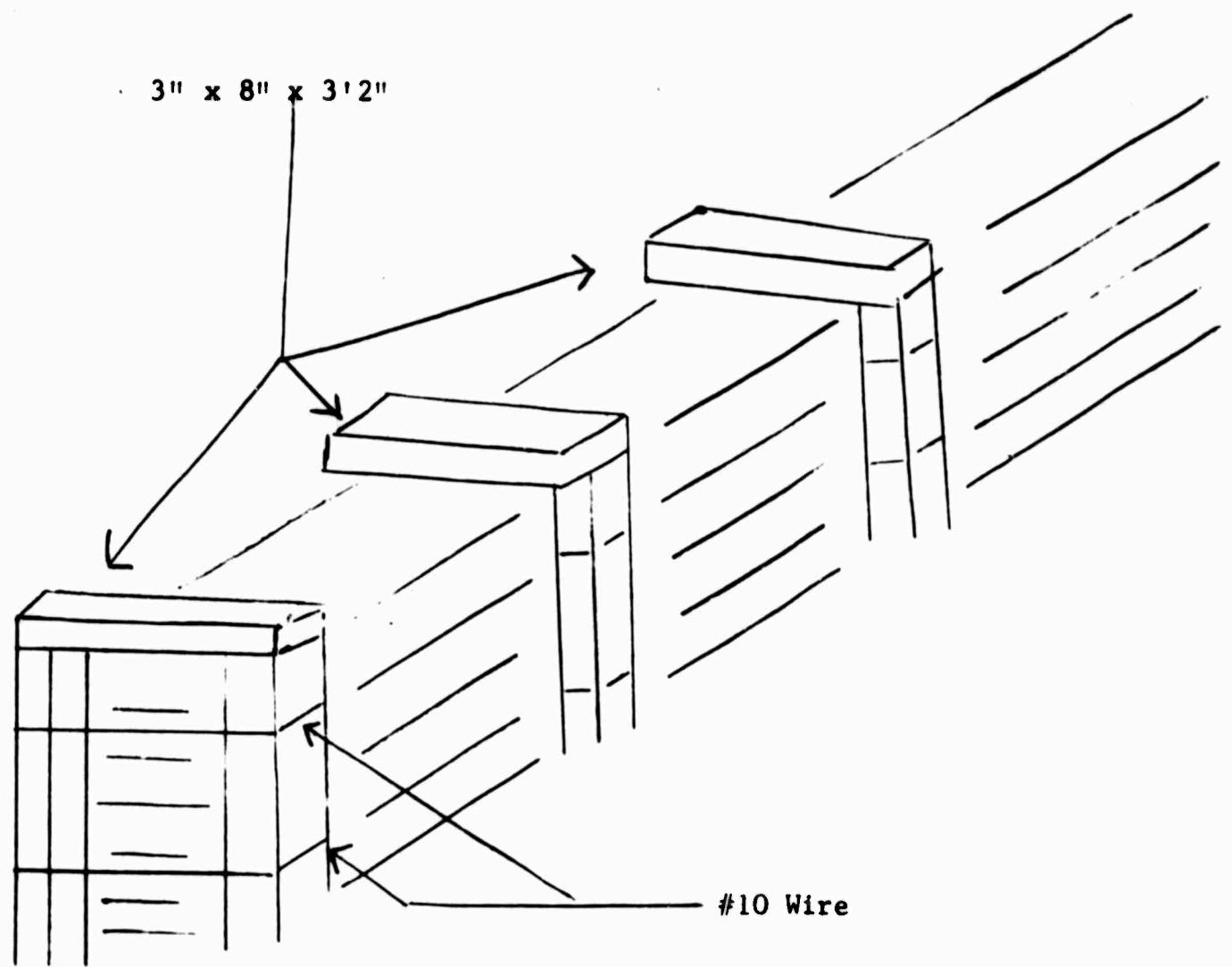
HQ, US Army, Pacific, APO San Francisco 96558 27 JAN 70

TO: Assistant Chief of Staff for Force Development, Department of the
Army, Washington, D. C. 20310

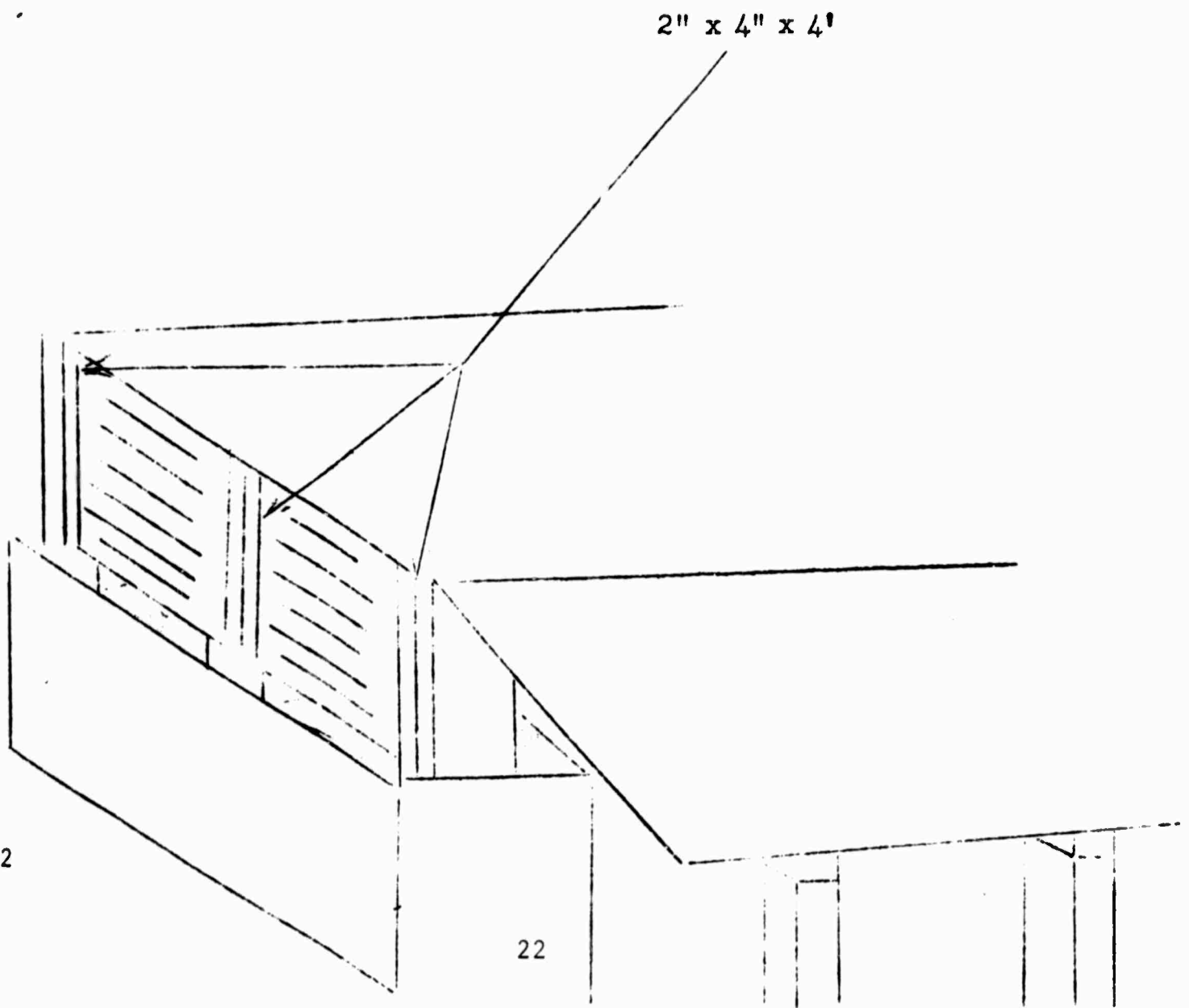
This headquarters concurs in subject report as indorsed.

FOR THE COMMANDER IN CHIEF:

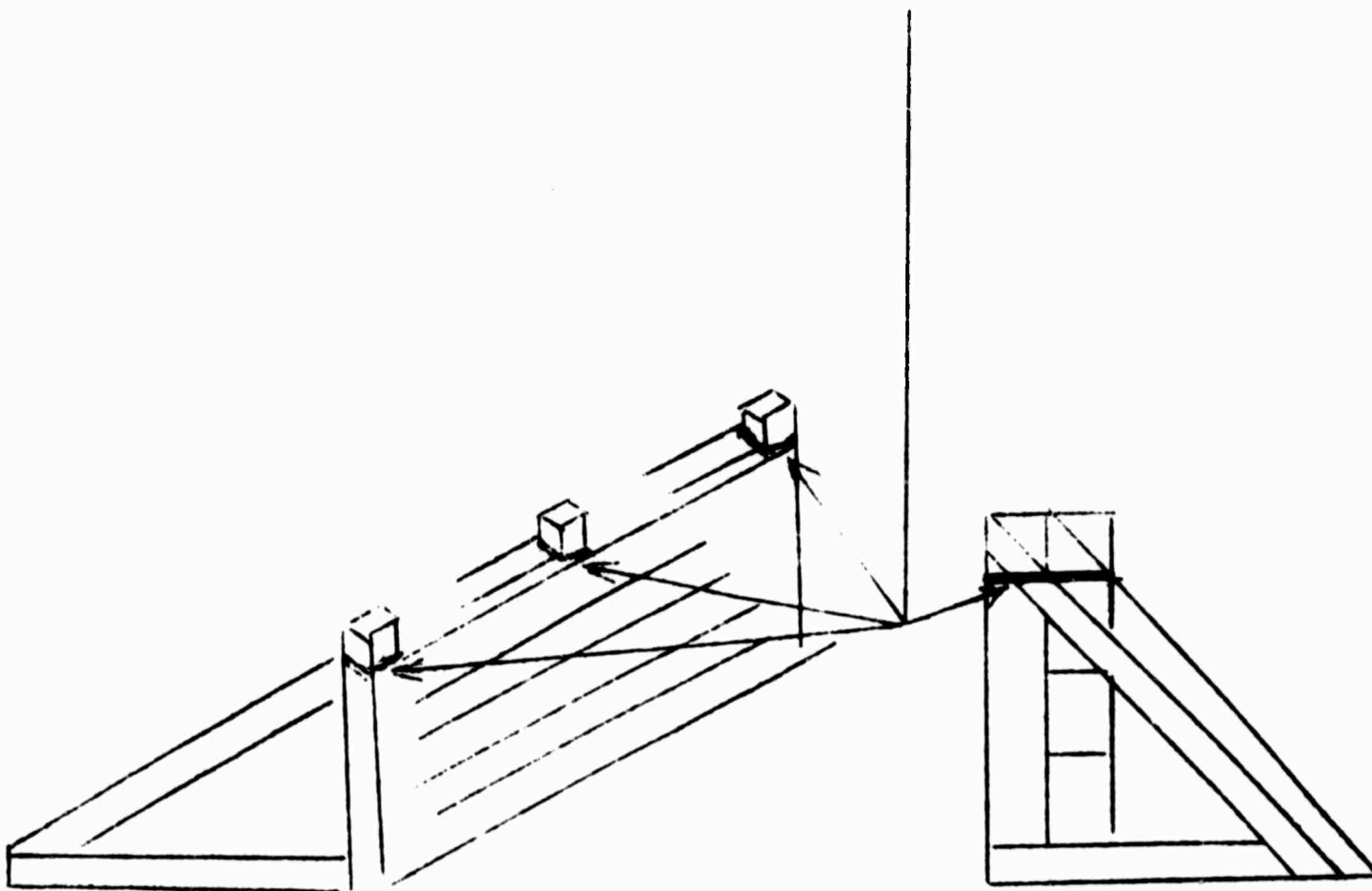

C. L. SHORTT
CPT, AGC
Asst AG

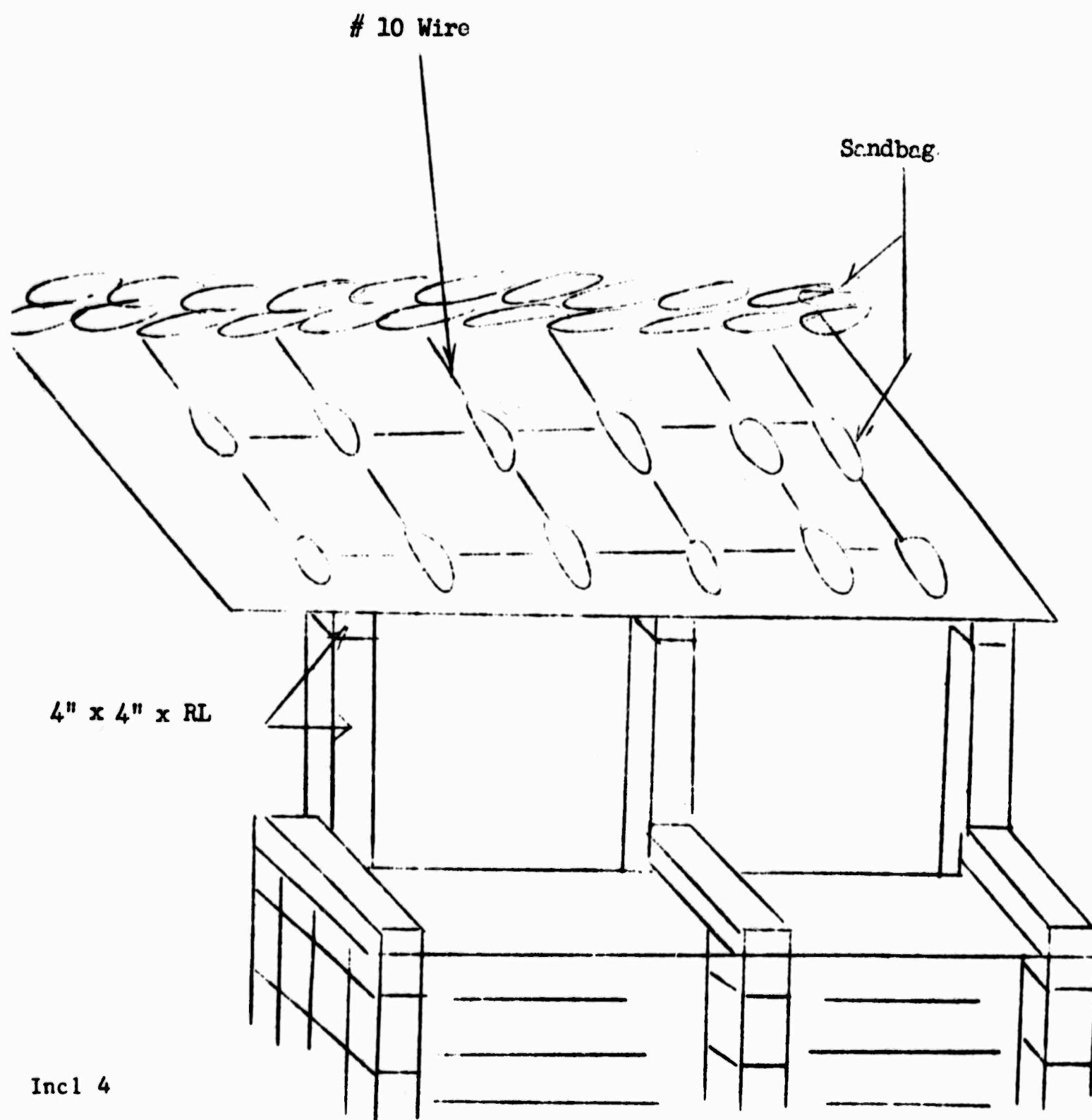


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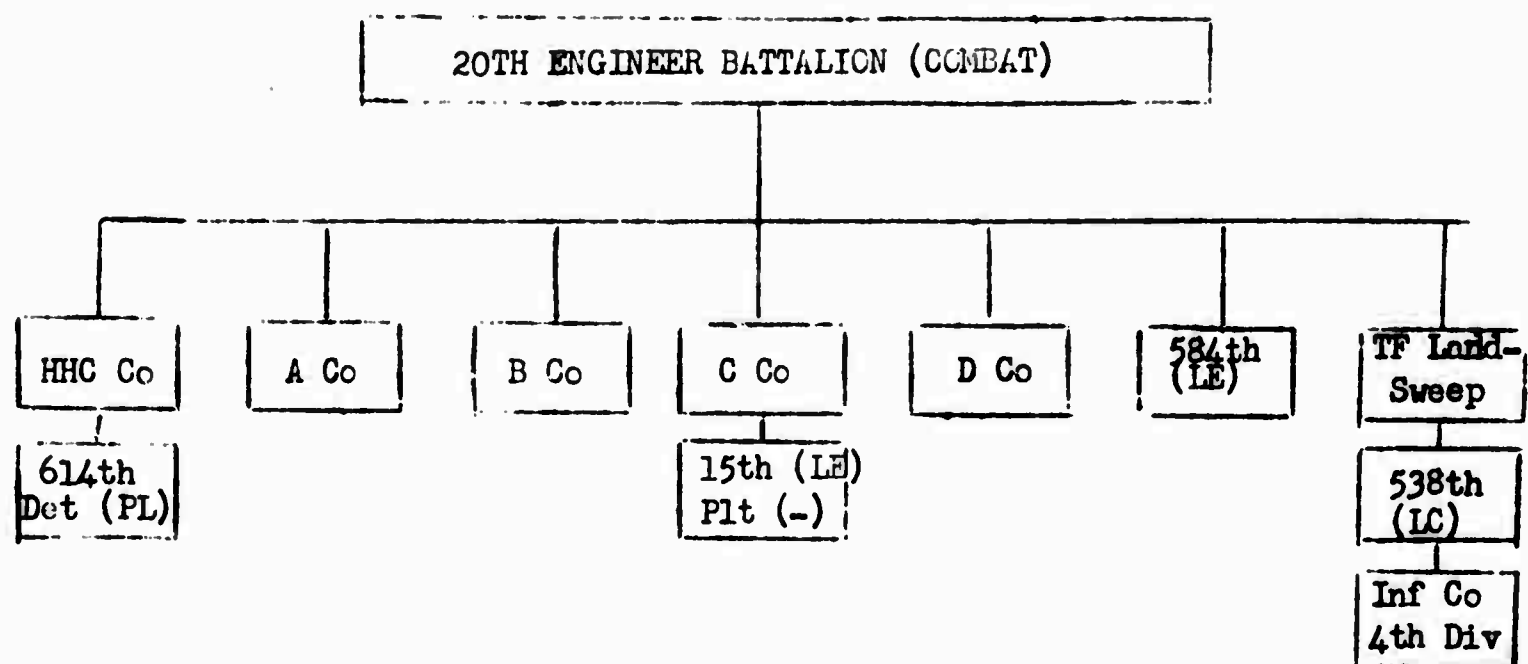


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INCLOSURE # 5 (Organizational Chart 20th Engineer Battalion (Combat))



UNCLASSIFIED

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